

# Trajectory Option Set Generation to Support NAS Users during CTOP Events, Phase I

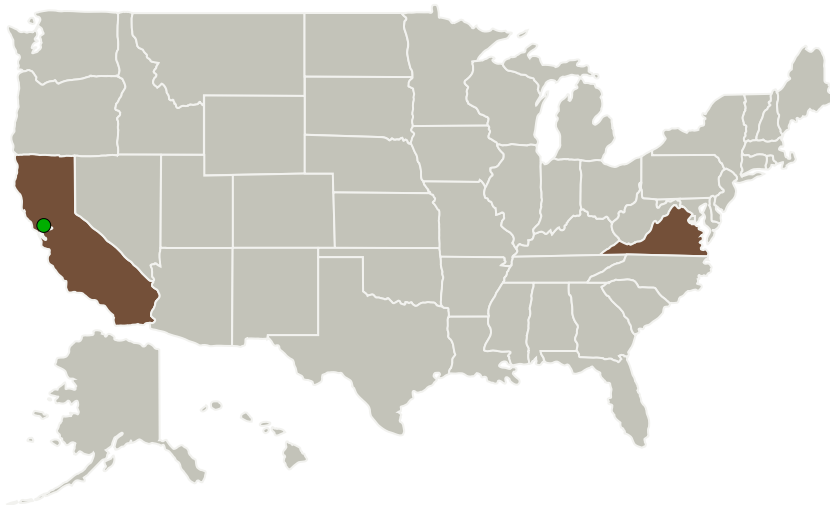
Completed Technology Project (2011 - 2011)



## Project Introduction

Concept SEVEN (System Enhancement for Versatile Electronic Negotiation) is a new type of Traffic Management Initiative (TMI) that has been in research and development within the Collaborative Decision Making (CDM) program for years. It allows for the electronic negotiation of routes based on user-submitted preferences when capacity is restricted in an area of the airspace. The first phase of SEVEN, now called the Collaborative Trajectory Options Program (CTOP), will be deployed operationally on November 2011. In this project, Mosaic ATM proposes to develop a decision support tool for NAS users that will allow them to automatically generate the optimal route options and their relative costs during CTOP events. This will allow users to take full advantage of the new capabilities and the opportunities for reducing ground delays and/or fuel burn. Additionally, this capability will be available for integration into NAS simulation tools such as ACES and FACET, to allow NASA to model high-fidelity, realistic user trajectory preferences generally and in response to CTOP TMIs in particular. In Phase 3, Mosaic ATM will additionally provide libraries containing the key algorithms for incorporation into existing flight planning systems.

## Primary U.S. Work Locations and Key Partners



Trajectory Option Set  
Generation to Support NAS  
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Phase I

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Organizations Performing Work	Role	Type	Location
Mosaic ATM, Inc.	Lead Organization	Industry	Leesburg, Virginia
● Ames Research Center(ARC)	Supporting Organization	NASA Center	Moffett Field, California

Primary U.S. Work Locations	
California	Virginia

## Project Transitions

**February 2011:** Project Start

**September 2011:** Closed out

### Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/138701>)

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Organization:

Mosaic ATM, Inc.

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

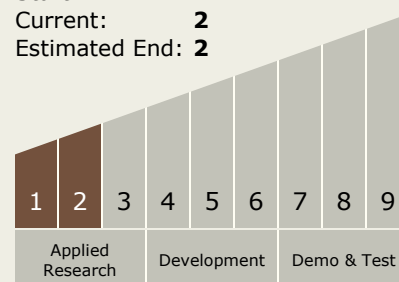
Carlos Torrez

### Principal Investigator:

Lara S Cook

## Technology Maturity (TRL)

Start: **1**  
Current: **2**  
Estimated End: **2**



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## Technology Areas

### Primary:

- TX16 Air Traffic Management and Range Tracking Systems
  - └ TX16.3 Traffic Management Concepts

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System